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**ADDRESSING SEED SECURITY IN DISASTER RESPONSE
LINKING RELIEF WITH DEVELOPMENT
OVERVIEW**

Edited by

**Louise Sperling, Tom Remington,
Jon M Haugen, and Sigrid Nagoda**



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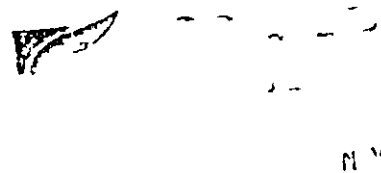
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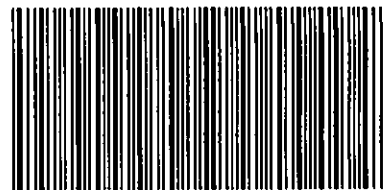


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Two sets of donors had the vision to fund comprehensive follow up of emergency interventions. From the United States Agency for International Development, Laura Powers of the Office of Foreign Disaster Assistance and Eric Witte of the Economic Growth and Agricultural Trade Unit have been relentless in trying to find out what really happens—and in improving emergency practice. Lillian Wikstrøm of the Section for Humanitarian Affairs at the Ministry of Foreign Affairs in Norway has also shown particular interest in improving crisis response.

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Finally, we thank our respective organizations for allowing us to work together in this unusual alliance uniting research and emergency efforts and the skills of international and national research centers and nongovernmental organizations. Our recognition to CIAT/Africa, CRS East and Central Africa, and CARE Norway for enabling this collaboration.

Dedication

To the many farm families who never seem to catch a break—yet who show tremendous courage and resilience in the face of disaster.

And to the many practitioners who do their best to assist—against formidable odds and often at considerable risk.

Overview of Findings and Reflections

Louise Sperling
Tom Remington
Jon M. Haugen

Introduction

This volume contains eight case studies managed by CIAT, CRS, and CARE Norway in a project entitled *Assisting disaster affected and chronically stressed communities in East, Central and Southern Africa: Focus on small farmer systems*. The case studies were undertaken to evaluate various forms of emergency seed aid and to couple these with analyses of the broader seed and crop systems. The objectives were to understand if and how vulnerable farmers are being helped by the kinds of assistance they receive—and how to move forward on improving practice.

The work was undertaken over a two-year period in seven countries in Africa. In all cases, the seed aid practitioners were also engaged in the evaluations and reflections, so that lessons learned could immediately influence the next steps of practice. It is to the credit of the participating national agricultural research systems (NARS) and nongovernmental organizations (NGOs) that they were willing to take a hard look at the effectiveness of their interventions. Equally, the donors, both USAID/OFDA and the Ministry of Foreign Affairs/Norway, are to be lauded for promoting substantive follow-up on emergency assistance because such follow-up is rare.

Table 1 gives the broad overview of the major features of the case studies: the countries in which they were undertaken, the stresses that originally triggered a decision to supply seed-related assistance, and the types of interventions that eventually unrolled. Note that the analyses of the real stresses changed as the work progressed.

Table 2 hones in on the salient (defining) questions of each field program. Five of the cases address key features of specific interventions (such as introductions of new varieties), while three present overviews of the practice and evolution of seed aid on a country-wide basis.

In the volume that follows, case study abstracts provide findings specific to the intervention and context. In this introduction, we step back and reflect on the broader findings that emerge from this rare opportunity to examine seed aid across countries, across stresses, across interventions, and across different types of seed systems.

Table 1 CIAT/CRS/CARE Norway Project Major Descriptors

Case study descriptors	Content
Countries	Burundi Ethiopia Kenya Malawi Mozambique Uganda Zimbabwe
Trigger Stresses	Drought civil strife flood plant disease (and crop breakdown) distorted political economy
Interventions	Direct seed distribution Seed vouchers and fairs Starter packs and targeted input distribution Community based seed production Introduction of new varieties
Crop foci	Maize beans cassava sorghum rice millet cowpeas bananas sweet potatoes also wheat barley vanilla cocoa moringa

Table 2 CIAT/CRS/CARE Norway Project Defining Questions

Specific site	Defining question
Analysis of Specific Interventions	
Eastern Kenya	Direct seed distribution and seed vouchers and fairs what is their relative cost effectiveness?
Northern Burundi	Seed vouchers and fairs and the role of traders who benefits?
Western Uganda	Seed vouchers and fairs real agro biodiversity gains?
Western Kenya	Introductions of new (self pollinated) varieties in period of crop breakdown do informal farmer producer groups move quality seed and quickly?
Northern Mozambique	Introductions of new varieties in a period of crop breakdown are there special concerns with vegetatively propagated material?
Overview of Seed Relief and Evolution of Practice	
Malawi	Direct seed distributions Seed vouchers and fairs Starter packs/targeted input programs Community based seed production
Ethiopia	Direct seed distributions/local procurement
Zimbabwe	Direct seed distributions

General findings Seed systems under stress

Acute response implemented in chronic stress contexts

Emergency seed system assistance was delivered in six out of the eight cases in response to what was characterized as an acute stress. That is, acute seed insecurity was presumed to have been brought on by *distinct, short duration events* that affected a significant portion of the population. However, more in depth analysis in all six cases showed the problems to be of a more chronic, systemic nature, e.g. declining productivity, water related stress, ongoing civil unrest, and/or misplaced political policies.

The other two cases, both of crop breakdowns (one in western Kenya with beans and the other in northern Mozambique with cassava) were the only ones in which prior assessments (or diagnoses) actually took place. These revealed that the acute manifestation was due to more systemic biotic/abiotic and economic pressures, build up of plant disease, lack of crop rotations, declining farm sizes.

The result of an acute response in a more chronically stressed context means that the problem is not alleviated and that seed system assistance is then needed—again and again. However, the effects of giving acute aid in chronic stress contexts are not just neutral (and may have negative impacts). During the second and third rounds of aid, one is not just starting from the same (compromised) baseline. Increasing evidence, within and beyond these case studies, demonstrates that aid given on a repeated basis distorts farmers' own seed procurement strategies (see Malawi case herein and Kenya case Sperling, 2002), undermines local seed/grain market functioning (Burundi case herein) and even compromises the development of more commercial seed supply systems (Zimbabwe case herein and Tripp and Rohrbach, 2001).

So, there are negative effects of giving acute seed aid on a repeated basis, particularly for vulnerable farmers, for local and regional traders, and for the developers of private enterprise.

Chronic seed distribution promotes the emergence of a relief seed system

Seed aid distribution is taking place in a large number of countries, one season, two seasons, three seasons, and beyond. The giving of seed aid is itself becoming a chronic activity. Table 3 summarizes the number of years seed aid has been given in several of the countries under study. Figures have been amassed from actual government records, from NGO reports, and from the accounts of implementers working on the ground. There seem to be few checks for stopping such assistance (simply when funds dry up?) and deliberate exit strategies have not been planned.

Table 3 Chronic Seed Aid Distribution

Country	Seed Aid Distributions
Burundi	22 seasons since 1995
Eastern Kenya	1992/93, 1995/97, 2000/02, 2004
Ethiopia	Food aid 22 years since 1983/84 Seed aid on and off during the same period
Malawi	9 seasons or more since 1992
Zimbabwe	Near continuous since 1991 (food aid, seed aid, or both)

The rise of a chronic seed aid system has been identified as a profitable business opportunity for the entrepreneurial who specialize in quick delivery of a small range of crops. It has also led to the rise of a separate seed system based on relief, i.e. a relief seed system (see the Ethiopia and Zimbabwe cases). Relief seed systems are created to assist farm communities in post-disaster contexts and are based on the assumption that other seed channels (in both the formal and farmer seed systems) are simply nonfunctional.

Relief seed systems have evolved dramatically and differentially in different countries in Africa, but their rise has been quick and steady. They seem to be of two basic types: in Kenya, Zimbabwe, and Malawi, there are commercially based relief seed systems. This is because of the importance of maize as a commercial crop and the dominance of commercial maize in the seed market. In countries without a significant maize-based commercial seed sector (like Burundi) or those with a niche market (Ethiopia), donors and relief agencies have always relied on the farmer seed system to source their seed for emergency redistribution. The functioning of such systems involves a straightforward set of steps: a disaster is declared, seed need is assumed, and then a well-established chain of suppliers moves into action.

No diagnosis and an assumption of lack of seed trigger seed-related disaster responses

The lack of any diagnosis related to the seed system has now become a commonplace observation within the disaster literature (Sperling and Cooper, 2003). In practice, one of four strategies is employed for assessing seed security, and none is sufficiently accurate or timely for assessing seed security among vulnerable farming populations:

No assessment is done at all—and seed need is assumed.

Food security assessments are effected—and seed need is assumed.

A crop production fall (decline) is measured—and seed need is assumed.

Lengthy surveys of farming and rural production systems are completed—and the results are analyzed and written up—after emergency seed has been delivered.

Within the cases documented here, only two instances of diagnosis or problem assessment were noted. Both were research-driven and related to an analysis of progressive crop failure due to plant disease/farming system pressures.

In the absence of seed-related needs assessment, the default option has been to assume that there is a lack of available seed. This has been done in a wide range of disaster contexts since the start of seed aid practice.

Two sources of concrete information, from very different perspectives, indicate how incorrect this automatic assessment of lack of availability often is:

1. A growing number of studies have actually traced where farmers in disaster situations sourced the seed they planted—in areas where seed aid distribution had taken place. Table 4 indicates that in contexts where precise data were examined (and with larger sample sizes), relatively little of the seed sown came from emergency aid (with the importance of the assistance varying by crop and context). This means that, as farmers were lining up to become beneficiaries of free seed aid, they were simultaneously sourcing non-aid channels to access most of their needed seed supplies.

Table 4 Importance of Relief Seed in Farmers' Overall Seed Supply during Disaster Periods

Context	Crop	% of seed planted sourced through relief	Source
Zimbabwe/drought/political instability/2003	Pearl millet	12	Bramel and Remington (this volume)
Rwanda/war/1995	Beans	28	Sperling 1997
Kenya/drought/1997	Maize	11	Sperling 2002
Somalia/drought/2000	Sorghum	10 17	Longley et al 2001
Somalia/drought//2003	Maize	3	Longley et al 2001

This figure includes seed delivered by NGOs and the government during the stress period, some of which may have been labeled relief. During normal times farmers access 5% of their pearl millet seed from these channels.

** The figure of 28% came from the first seed distribution, two months after intensive fighting ceased. Relief seed was then distributed again the next major planting, and in January 1996, and only 6% of the bean seed shown came via relief channels.

2 This project also set out to assess seed availability via local seed/grain traders, who may supply seed in crisis periods. In Burundi, where seed aid has been given since 1995, 41 traders recounted their experience with seed sourcing over the last 10 years of drought and war. Seventy-eight percent indicated that there had never been a problem with availability. The other 22% nuanced their answers, with only one (item *a* below) suggesting an absolute lack at one point in time (see Burundi case, this volume).

- a only once—during the 1993/94 war—when everyone was fleeing (n=1)
- b in 1993, when all seed had been bought up by the emergency NGOs
- c during the events, seed was available in Rwanda (30 km away) but my bicycle broke down
- d the problem was price

Trader remarks highlight how relative the term availability is and how directly linked it is to a trader's means. Those who source seed using bicycles and with slim price margins have different parameters of availability than those with large trucks (and who also easily cross borders). As this overview is being written, a large-scale commodity trader has been hired by the project to assess seed availability in eastern Kenya—where government and NGOs have been distributing free seed on an impressive scale (for the second season in 2004). The Kenya analysis is drawing results comparable to the Burundian one: seed is widely available in local seed/grain channels. Via the Kenya case, this project has commissioned the commodity trader to construct a practical checklist for assessing market functioning (including seed availability) from an expert point of view.

In sum, in terms of assessment, the field-based studies show that in multiple contexts (e.g., drought, civil strife, or both), farmers have been able to access the large majority of their seed from local channels. Several trader assessments have further confirmed the availability of seed on a large scale—during periods of outside aid. Again, availability is a relative term and much depends on the means of traders serving a region, their price margins, transport facilities, and seed sourcing networks.

To date only two types of cases have been identified that show when availability of seed in a disaster context may be a fundamental constraint. The first case is where local seed on offer is no longer adapted to local growing contexts—often due to biotic and abiotic pressures (e.g. cases herein are in eastern Kenya due to bean root rots and northern Mozambique due to cassava brown streak). Purists might label this problem as a seed quality constraint rather than one of availability. However, the fact remains that farmers did not have anything to plant that would actually grow.

The second case involves contexts where there have been substantial production shortfalls and local markets have never sufficiently developed to deliver routine seed or planting supplies. In addressing this latter issue of availability and market failure, it might be useful to distinguish between spatial and temporal issues of availability or the lack thereof. Delving into the root causes for these lacks should encourage practitioners to move from a focus on seed aid to one on strengthening the seed system.

Local seed/grain markets identified as a core element for seed system stability

The more one looks at seed systems in detail, the more the role of local seed/grain markets appears as a central element in promoting seed security. Varied market-related findings are emerging from direct field analysis:

- 1 Market-sourced seed (especially for self-pollinated crops and cereals in general, with the exception of maize) provides a core for farmer seed security, especially among the more vulnerable (e.g. in this volume: Burundi, Zimbabwe, and western Kenya; see also Rwanda (Sperling 1997) and eastern Kenya (Sperling 2002)).
- 2 Local grain markets from which seed is obtained have been shown to be more durable than expected in stress periods, with analysis showing their functioning in periods of civil strife (e.g. Burundi) as well as in periods of drought and floods.
- 3 The genetic quality of seed sourced in markets is most often acceptable to farmers, as it is generally grown in surrounding agroecological contexts.
- 4 Surprisingly, the physiological and phyto-sanitary quality of seed purchased in local markets can also be partially regulated (through purchase from known contacts and rigorous farmer sorting). Laboratory analyses (for purity, health, and germination) demonstrate acceptable quality parameters for the market seed examined. Such data do not mean that all market seed is of high quality. They do, however, firmly show that the reverse is not universally true. Market seed *a priori* should not be equated with low-quality seed.
- 5 For the non-hybrids, local seed/grain markets are proving an important channel for moving new varieties—that is, new genetic materials developed by formal research systems. In fact, for some crop types, local markets seem to move new varieties more effectively than formal seed channels.
- 6 Markets have proven to be a useful source for re-accessing seed of desired types and quantities that has been lost or temporarily abandoned in stress periods.

Given their pivotal role in seed system stability—and resilience—one of the major conclusions of our case studies is that local grain/seed markets must be strategically supported, not undermined, in post-stress periods. They provide a central core of seed security, particularly for the vulnerable.

Seed systems during crisis prove generally resilient—except in cases of crop/variety breakdown

Evidence shows that seed system resilience of the local farmer system is the norm rather than the exception during periods of stress. Resilience in this context means that seed channels continue to provide varieties and seed that farmers find of acceptable quality and which will grow when sown. Further, those analyses that focused on varietal diversity have generally found that major varieties are not lost—not during drought war nor even select cases of flood (viz Ferguson 2003).

There are important exceptions to this observation on seed system resilience. In areas of crop breakdown when existing varieties no longer perform due to formidable pressures (usually plant disease or declining fertility) the local systems may not have the capacity themselves to bring in new materials. Particularly in cases where vegetatively propagated crops (e.g. cassava, sweet potatoes) provide the base of food security, outside assistance may become key. The problem of cassava mosaic virus in East and Central Africa since the late 1980s demonstrates such need.

Misplaced seed-quality parameters in emergency response result in overemphasis on “health” to the detriment of genetic quality

Issues of seed quality very much shape the types of seed assistance (and asset transfers) that can unfold. In emergency seed procurement, quality issues most often focus on whether the seed is certified or not (as many donors require formal verification as a prerequisite for seed procurement). Quality stereotypes have equated certified and formal sector seed as being of high germination and good seed health, with poor assessments applied to farmer seed (home produced and procured from the market) which is stereotyped as generally poor. Case study analyses have shown that such labels can be deceptive. The quality of formal sector seed may not be as advertised (this volume see western Kenya case) and emergency grade seed overall is of highly variable health and genetic quality (eastern Kenya case). Farmer seed and market seed has also proven to be objectively of good quality as assessed in laboratory analyses (western Kenya case).

Some of the existing emergency interventions build in special measures to examine quality on a site by site basis, such as the catalyzing of regulating committees during seed vouchers and fairs (SV&F). Undoubtedly, additional mechanisms can be put in place to reinforce acceptable quality standards. Minimally, seed on offer via emergency assistance should be as least as good as that which farmers routinely sow.

The focus on the seed health parameter of quality has diverted attention away from what is probably the more important quality issue for seed: the seed on offer at the very least must be adapted to the stress conditions at hand and have generally acceptable crop characteristics. It is puzzling that genetic (variety) quality in practice has been given second priority in emergency responses. Varieties emerging from formal research sectors or on offer from commercial companies are assumed good enough whether or not they have been selected for use in the regions of stress or for growing under the management conditions practiced by beneficiary farmers.

Optimally, the genetic quality on offer should anticipate on site stresses, e.g. they should be early maturing for those facing a hungry gap or resistant to specific disease pressures in areas with marked pathogen build up.

Intervention-specific findings

Moving from the overview of seed system insights the section below summarizes findings tied to specific types of support interventions aimed at seed systems

Broad pattern of default DSD to CBM

At present a narrow range of responses are employed to bolster seed systems in stress. Diagnoses being minimal or perfunctory at best, the evolution of a seed related assistance pattern is well established (see Malawi, Zimbabwe, Ethiopia cases, this volume). During emergencies, institutions jump to direct seed distribution (DSD) by default. During recovery, institutions move to community based multiplication (CBM) schemes by default. So seed system assistance is characterized by option by default. Practitioners supply interventions they feel competent to implement, but not necessarily the interventions that are needed for a given context.

DSD versus SV&F Misplaced comparison

The capability to conduct a range of interventions has created a divide in practitioner circles. Seed vouchers and fairs are being implemented by those who sense the need to go beyond seeds and tools (S&T) while S&T (re-baptized as direct seed distribution) remains the baseline response.

DSD is about seed—nothing more and nothing less. It assumes that seed is not available—and orchestrates a seed transfer. If done well, a range of varieties and crops can be delivered to a large number of beneficiaries—and in time for sowing. The DSD approach is neither inherently good nor bad.

SV&F at first glance, focuses on seed, and also involves a seed asset transfer. The baseline assumption for implementing SV&F revolves around a problem of access, and more explicitly, that there is *not* a problem of availability in the disaster-affected zones.

As one looks more deeply, however, into the two asset-related transfers, it is clear that an apple and orange comparison has been put forward. While both use seed as their most visible vehicle, SV&F are implemented to achieve a much broader and substantially different set of goals (see eastern Kenya, Burundi, western Uganda case studies, this volume). They are designed to build and stimulate local seed systems under stress, as well as to give a boost to local trading economies in potentially unstable times. In supporting local livelihood systems, SV&F *de facto* lay the immediate ground for moving away from outside or external assistance and link relief and development aims from the early stages of a crisis.

Fine-tuning SVFS—only through follow-up

Three aspects of SV&F were also subject to greater scrutiny in the case studies, and unanticipated insights emerged only because of follow-up.

- **Agro-biodiversity not necessarily supported by SV&F**

Contrary to expectations, crop and variety diversity is not enhanced *a priori* by the SV&F approach, but neither are the systems *de facto* undermined. The diversity present at a fair cannot reflect the range of diversity in the farming system (some crops do not come to market and less sought-after varieties are not put on offer by traders). The diversity actually put on offer is also not necessarily accessed by farmers; some seek first to fill their vital needs—before their optional wants. More diversity-related transactions could be promoted if, from the supply side, traders and seed sellers were given incentives to put more on

offer (prizes? or modest subsidies for offering diverse and new varieties?) Demand might also be stimulated if farmers were given more knowledge about the products on offer as well as the opportunity to purchase trial size samples. Ultimately the demand side will have to be more strategically stimulated if and when SV&F are reshaped to become innovation and livelihood fairs *per se*. SV&F could serve as important venues for putting new varieties, management ideas, or agro enterprise products on offer. They are already being used to move non seed inputs (as done at the trade input fairs in Mozambique).

- **Traders are important beneficiaries in SV&F, but not at farmers' expense**

Despite the small scale of transactions, traders at SV&F are often drawn from surrounding locales and prove key for injecting immediate cash into the stressed economy.

Traders emerge as a clear beneficiary group in SV&F in addition to, but not at the expense of, beneficiary buyers. In the Burundi case, those selling at fairs tended to emerge from a specialized trading class with an evident female bias (women cannot easily own land). In western Uganda, traders were generally seed sellers, as likely to be full time farmers as not.

Traders particularly benefit from fairs in terms of (a) receiving direct cash payments (versus having to extend credit), (b) having a high volume of daily sales, and (c) obtaining prices slightly higher than on the open market.

As traders are generally local, investment in their business translates into investment into the local economy, with the SV&F trader revenues in Burundi, for instance, being reinvested particularly in commercial activities (including the extension of credit).

The coupling of farmer beneficiary and trader beneficiary seems to be a win-win situation. However, as the scale of SV&F widens, the relative client benefits should be examined more closely.

- **Analyses of cost-effectiveness not conclusive**

Several cost-effectiveness analyses have been done comparing DSD and SV&F, and their results are not conclusive. Much depends on the scale on which activities have been implemented and how these have evolved through time (the capacity building costs become lower as the relatively unknown approaches become more familiar). The major difference in cost/benefits are not the direct effects so much as the ancillary effects on surrounding seed, economic, and livelihood systems. In terms of seed *per se*, greater diversity is available through SV&F, as well as the important fact that they allow farmers to select among that diversity in response to their own particular stress situation.

Variety introductions prove potentially key in a crisis but seed diffusion channels need to be focus of equal concern

New varietal introductions can make a key difference to production and stability in crisis times. However, the cases indicate several pivotal decisions that need to be made concomitantly with an assessment that new varietal material may be warranted.

- **Variety basket should be on offer**

A choice of varieties should be on offer—particularly as the context is one of stress. In both western Kenya and northern Mozambique, the basket of options helped to anticipate probable future breakdowns of disease resistance.

- **Not everything new is good**

Not everything new is good. Maize hybrids, in particular, are often promoted as new items on offer in stress contexts. However, their performance is very uneven as an emergency input (see Kenya, Zimbabwe, Ethiopia, Malawi cases). This underlines the need for a strategy for new introductions to be carefully weighed, particularly if the recipient herself is not the one selecting the precise emergency aid option.

- **The choice of specific diffusion channels is critical for new variety impact**

The choice of diffusion channels for moving new varieties (formal, informal, market, groups of farmers, etc.) is potentially as important for achieving impact as the quality of the product being diffused. It makes strategic sense to build on channels that move products fast, widely, at low cost. The case analyses showed unimpressive results for working through informal farmer seed multiplier groups, but remarkable diffusion results via local grain/seed traders. Parallel to a focus on diffusion channels, the varied seed production models being promoted throughout Africa (of which farmer multiplier groups are one) need to be designed from the start with an explicit impact-oriented outreach focus—if they are to reach the vulnerable.

Several of the case studies showed that new varieties in themselves can have an important impact in specific kinds of stressed contexts. However, research needs to speed up its product development response if it is to become a reliable partner in alleviating disaster scenarios.

Seed security

Moving forward the frontiers of disaster response

The steps for improving the effectiveness of seed aid practice seem fairly straightforward and implementable over the next five years. They involve a combination of positive strategies: (a) promoting real learning evaluations that can fine-tune current implementation modes; (b) broadening the basket of potential response options—through low-risk case scenario tests and capacity building; (c) supporting assessments of seed system security prior to intervention (which will also encourage methods/tools to become further refined); and (d) developing strategies for emergencies that factor in chronic stress. A fundamental step for moving forward also involves acknowledging that more of the same—repeated DSD or SV&F—may not be achieving the expected humanitarian aims. Most of the recommendations below encourage a moving away from knee-jerk emergency responses—towards interventions where implementers better understand what they are implementing and why.

Evaluation of assistance

The scale of seed aid has escalated since it was introduced as a complement to food aid about 15 years ago. Given (a) its impressive scale, (b) the observation that seed aid has become repetitive, and (c) evidence that aid can have negative as well as positive effects, evaluation should be promoted for a range

of contexts. Perfunctory evaluations (such as tallying the quantity of seed distributed to a number of farmers) serve as little more than self confirming checklists that implementers have done a good job. Instead, evaluations should minimally have two salient characteristics:

First, they should be situated within a brief analysis of the functioning of on going seed systems and frankly assess how important the aid was versus other seed related sources and support. Taking a sample of farmers and finding out what they actually sowed and why is quick, easy to do, and gives a reality check on the importance of the intervention.

Second, each evaluation should program a critical question follow up so as not to repeat the same mistakes. e.g. did the poorest get seed? (why or why not?) Was the crop profile on offer appropriate? (why or why not?) Did farmers re sow the new varieties delivered? (why or why not?)

The money required for such follow ups is modest in relation to the funds employed in the intervention itself. The time required for such punctual questions involves but a matter of weeks. If such modest time/money commitments prove obstacles for implementing organizations, they should not be intervening at the heart of vulnerable farming systems. Ideally, evaluations of seed system support should also be framed within assessments of the larger regional economy and livelihoods, but it is unrealistic to expect the quick response teams to conduct in-depth analyses. So for moving evaluation in seed aid forward, we suggest the practical and do-able, and consign the ideal (more in-depth) to specialists.¹

Broadening the base of response options Focus on capacity building

The repertoire of seed system responses in emergencies has already been broadening, particularly in the last four years, with seed fairs, vouchers, direct cash payments, input and livelihood fairs, etc. Further follow ups analyzing and comparing these options are underway in a number of countries and are supported by several agencies (e.g. in Ethiopia, OFDA/USAID and ODI). Unfortunately, implementation of response alternatives is frequently de-linked from an analysis of the problem at hand (see next point on needs assessment) and pro-linked to the current specific capacity of the implementing organization. There is an urgent need to build the capacity of implementers to engage in a range of response options. Without an explicit donor focus on practitioner capacity building, we will get more of the same.

Refinement and promotion of seed system security assessments (SSSA)

The methodology for doing seed system security assessments is quickly being honed, and key elements can be applied immediately. Work during the last few years has shown which seed channels to focus on during acute crisis (90% of the time, own production and local seed/grain markets) and how to assess whether such channels are functioning, at what level, and for whom.

For instance, one of the tenets of the SSSA Guide (CIAT/CRS/CN forthcoming) is that *production shortfall is not necessarily equal to seed shortfall*. Modeled after actual Eastern African farming parameters, the example illustrated in table 5 clearly shows that one can lose most of the harvest (88% for beans and even 99% for sorghum) and still have enough seed to sow—assuming that all the crop harvested can be saved for actual planting.

¹ At the time of this writing, CRS has conducted ex post evaluations of seed vouchers & fairs in Cambodia, Ethiopia, and Zimbabwe, and has recently completed a meta-analysis of the SV&F approach (Bramel and Remington forthcoming).

Our understanding now of the importance of local grain/seed markets is also contributing to the SSSA guides and shifting the focus of methods beyond assessing what farmers actually have in their hands (own production and home stocks) to what they can access. Two key parameters shape market analysis in the SSSA in particular: Differences between the seed and grain on offer need to be factored in across crops and a spatial overlap must be laid over market zones and zones of agroecological adaptation. In all cases, elements of a comprehensive SSSA thinking guide are in place and such seed security assessments—as distinct from food need calculations—should be encouraged in the coming years. Only with more focused seed security assessments can we hope to move toward more tailored support responses.

Table 5 The Relation between Harvest (Home Production) and Seed Needed for Sowing (Theoretical Example, Eastern Africa)

Crop	Beans	Sorghum
Surface area per household	¼ ha	¼ ha
Seeding rates per hectare	100	10
Sowing needs per surface sown (¼ ha)	25 kg	2.5
Multiplication rates of seed	8	100
Harvest per surface sown (¼ ha)	200	250
% of harvest needed to meet basic sowing needs	12.5	1.0

Source: SSSA Guide (CIAT/CRS/CN forthcoming)

Factoring in chronic stress needs from the beginning of an emergency response

Finally, we highlight an implication of one of our key findings: that much of the acute response is being implemented in more chronically stressed contexts where a swath of the population is continually vulnerable—usually due to poverty.

In such a context, the emergency response should explicitly work through a lens that anticipates features of such chronic stress. At a minimum, interventions should be avoided that (a) expose farmers to increased risk and (b) have the potential to undermine functioning systems. In a positive vein, interventions should be promoted that (a) counter the stress but which also (b) aim to strengthen farmers' own capacities, bolster the functioning of their farming systems, and stimulate growth in the local economy. We now know firmly, mostly through seed systems studies, that seed (in)security is rarely about seed—and almost always about poverty. Hence, those implementing emergency responses should now face the obligation to squarely address this poverty link, even during periods of stress.

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